UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF NEW YORK

BAUSCH & LOMB INCORPORATED,

Plaintiff,

v.

COOPERVISION, INC.,

Defendant.

04-CV-6485T
DECISION and ORDER

INTRODUCTION

Plaintiff Bausch & Lomb Incorporated, ("Bausch & Lomb") brings this action pursuant to federal patent law, (codified at 35 U.S.C. § 100 et. seq.), claiming that defendant Coopervision, Inc. ("Coopervision") is infringing upon Bausch & Lomb's United States Patent No. 6,132,236 (issued on September 5, 2000)(hereinafter "the '236 Patent"). The '236 Patent, entitled "Toric Contact Lenses," generally discloses toric contact lenses that are shaped and manufactured in such a way as to minimize differences in the thickness and fitting characteristics of the lenses despite differences in certain optical-correction properties of the lenses. Plaintiff contends that the defendant is infringing upon the '236 Patent by making and selling contact lenses that infringe upon the patent.

Pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996)("Markman"), the parties request that the court construe

the disputed claim terms of the '236 Patent.[1] The following constitutes my construction of the claim terms in dispute.

BACKGROUND

I. Toric Contact Lenses

United States Patent 6,113,236 was issued to plaintiff Bausch & Lomb Incorporated (as the assignee) by the United States Patent Office on September 5, 2000. The '236 Patent discloses a "toric" contact lens with specific fitting characteristics. Toric contact lenses are generally used to correct "refractive abnormalities of the eye associated with astigmatism." '236 Patent at col. 1, lns. 7-8, and are called "toric" lenses because the portion of the lens correcting for the astigmatism generally has a toric (elliptical) shape.

An astigmatism is a condition of the eye in which the cornea has an irregular (toric) shape which causes light rays entering the eye to focus both in front of and behind the retina. As a result, a person with an astigmatism often has difficulty seeing objects that are both near and far. In this respect an astigmatism is different then the conditions of myopia (commonly referred to as

[1] This action was originally assigned to the Hon. David G. Larimer of this court. The parties fully briefed the claim construction issues while proceeding before Judge Larimer. Thereafter, the case was reassigned to this court. Having reviewed the parties' submissions, I find the issue of the disputed claim terms has been fully and comprehensively briefed, and therefore, I find that argument on the issue is not necessary.

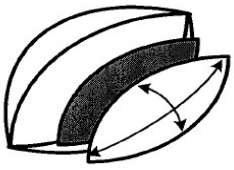
"nearsightedness") in which light rays focus in front of the retina, causing the sufferer to have difficulty seeing objects that are far away, or hypermetropia (commonly referred to as "farsightedness") in which light rays focus behind the retina, causing the sufferer to have trouble seeing objects that are in close proximity.

A toric contact lens corrects for an astigmatism by using a toric optical zone on either the front (anterior) or rear (posterior) surface of the contact lens. The "optical zone" of a contact lens is located in the central portion of the lens, and is the portion of the lens that corrects for vision abnormalities. The optical zone is surrounded by the "peripheral zone" of the lens, which area assists in keeping the lens on the eye, and in the case of toric lenses, properly oriented on the eye.

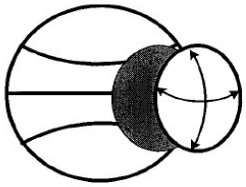
In a conventional, non-toric contact lens, the optical zone of the lens is spherically shaped–having a uniform curve along both the vertical and horizontal meridians. A toric optical zone, however, typically has a longer curve along the horizontal meridian, and a shorter curve along the vertical meridian, though some toric zones can be spherical. By utilizing two different curves within the optical zone, a toric lens can simultaneously correct for light rays that are focused in front of and behind the retina. In contrast, a spherical lens, because it utilizes only one

curve, can only correct for light rays that are focused either in front of, or behind the retina.

Perhaps the easiest way to understand the difference between a spherical optical zone and a toric optical zone has been suggested by the parties in their submissions to the court. As explained by both parties, a spherical optical zone takes a shape similar to the edge of a basketball: it is equally round throughout the zone. A toric optical zone, however, generally takes a shape more like the edge of a football: the curve is longer along one meridian, (usually the horizontal meridian) and shorter along a perpendicular meridian. Toric and spherical shapes are depicted in the illustration below, which appears in Plaintiff Bausch & Lomb's Opening Brief on Claim Construction, at page 5.



Depiction of a Toric shape



Depiction of a Spherical shape

_____Because persons with an astigmatism also often suffer from either myopia or hypermetropia, toric contact lenses often utilize two optical zones to correct for both conditions. '236 Patent at col. 1, lns. 9-14. One optical zone provides for spherical

correction: that is correction for nearsightedness or farsightedness. The other optical zone provides for cylindrical correction: that is correction for the astigmatism. The '236 Patent contemplates the use of two optical zones, one on the front surface of the lens, and one on the back surface of the lens. The optical zone that provides for spherical correction may be located on either the front (anterior) surface of the lens, or may be located on the back (posterior) surface of the lens. The optical zone providing cylindrical correction will be located on whichever surface the spherical optical zone is not located. '236 Patent at col. 1, lns. 15-17.

II. The '236 Patent

While toric contact lenses have been in use for decades, the novelty of the '236 Patent arises from the claimed ability to minimize the thickness of an individual lens by selecting certain sizes of the optical zones of the lens, and the ability to create a series of lenses which provide different cylindrical corrections, but maintain substantially uniform lens thickness throughout the series of lenses.

According to the '236 Patent, a common problem with toric contact lenses is that as the cylindrical correction of the lens increases, the thickness of the lens increases. '236 Patent at col. 1, lns. 43-49. Oftentimes, lenses with higher cylindrical corrections "will have greater thickness in at least one portion of

the lenses." '236 Patent at col. 1, lns. 47-49. According to the '236 Patent, varying thicknesses of lenses with the same spherical correction, but different cylindrical corrections, is problematic for practitioners who attempt to fit patients with correctly-fitting lenses that provide the appropriate optical correction. This is because practitioners typically "use sets of diagnostic contact lenses to determine which lens provides appropriate fitting characteristics and optical correction." '236 Patent at col. 1, lns. 38-41. Because lenses with different thicknesses have different fitting characteristics, practitioners experienced difficulty in identifying a lens that would both provide the necessary optical correction, and fit the patient properly.

The '236 Patent claims to solve the problem of variable thicknesses in contact lenses by adjusting the sizes of the anterior and/or posterior optical zones. According to the '236 Patent, the inventor found that:

> by adjusting the diameters of the posterior and/or anterior optical zones, based on cylindrical correction of toric contact lens, the thickness profile of the lens can be maintained fairly constant over a series of lenses, including lenses having a range of cylindrical corrections. In other words, in a series of contact lenses having different cylindrical corrections, the thickness of lenses in the series at any nominal section of lenses in the series, can be maintained consistent across the series.

'236 Patent at col. 3, lns. 1-11. According to the '236 Patent, by minimizing variations in the thicknesses of the lenses, the fitting

parameters of the lenses become more consistent, and this improvement leads to efficiencies in both prescribing and manufacturing contact lenses. '236 Patent at col. 3, lns. 16-21.

DISCUSSION

In 1996, the United States Supreme Court held in Markman v. Westview Instruments, Inc., 517 U.S. 370, 372, that "construction of a patent, including terms of art within its claim, is exclusively within the province of the court." Because the meaning of claim terms is often "the central issue of patent litigation . . . ." and because "most aspects of trial hing[e] on this determination . . . a conscientious court will generally endeavor to make this ruling before trial." Loral Fairchild Corporation v. Victor Company of Japan, Ltd., 911 F.Supp. 76, 79 (E.D.N.Y. 1996) (Rader, J. sitting by designation)(citing Markman v. Westview Instr., Inc., 52 F.3d 967 (Fed.Cir.1995)(internal quotation omitted)).

In determining how the terms of a claim are to be construed, "the court should look first to . . . intrinsic evidence . . . i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)(citing Markman, 52 F.3d at 979). "Such intrinsic evidence is the most significant source of legally operative meaning of disputed claim

language." Vitronics, 90 F.3d at 1582. "In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term[,]" and in such circumstances, reliance on extrinsic evidence, such as expert testimony is "improper." Vitronics, 90 F.3d at 1583.

In considering the intrinsic evidence, the court looks first to the words of the claims, including the claims not asserted, to define the scope of the patented invention. Vitronics, 90 F.3d at 1582. The words in the claim are given their ordinary and customary meaning, unless the patentee chooses to define the words in a specific manner. Vitronics, 90 F.3d at 1582. If the patentee chooses to be his or her own lexicographer, the specified definitions assigned to particular words or terms must be found either in the specification or the file history. Vitronics, 90 F.3d at 1582. Accordingly, it is always necessary to review the specification to determine if any specialized meanings have been given to terms used in the patent. Vitronics, 90 F.3d at 1582. Finally, with respect to intrinsic evidence, the prosecution history of the patent may often be of "critical significance" in defining claim terms. Vitronics, 90 F.3d at 1582. The prosecution history often contains express representations made by the applicant regarding the scope or limitations of the claims, and therefore is a valuable resource in determining the meanings of words used in the claims. Vitronics, 90 F.3d at 1582.

CONSTRUCTION OF THE DISPUTED CLAIM TERMS OF THE '236 PATENT

The '236 Patent contains 22 claims, three of which (Claims 1, 8, and 17) are independent. The independent claims are set forth below, with the disputed claim terms highlighted.

Claim 1 of the '236 Patent provides:

> A toric contact lens including a posterior surface and an anterior surface, one of said surfaces including a toric optical zone and the other of said surfaces including a spherical optical zone, the anterior and posterior surfaces being shaped to form a ballast oriented about a ballast axis,
>
> wherein a diameter of the posterior optical zone and a diameter of the anterior zone are selected to minimize thickness of the lens based on the cylindrical correction of the lens.

'236 Patent at col. 6, lns. 9-7.

Claim 8 of the '236 Patent discloses:

> A series of toric contact lenses, each lens in the series including a posterior surface and an anterior surface, one of said surfaces including a toric optical zone and the other of said surfaces including a spherical optical

> zone, the anterior and posterior surfaces being shaped to form a ballast oriented about a ballast axis, each lens in the series having a common effective base curve and overall diameter but different cylindrical correction,
>
> wherein each lens in the series has a posterior optical zone diameter and an anterior optical zone diameter that are selected to optimize thickness of lens based on the cylindrical correction of the lens.

'236 Patent at col. 6, lns. 33-44.

Claim 17 of the '236 Patent discloses:

> A series of toric contact lenses, each lens in the series including a posterior surface and an anterior surface, one of said surfaces including a toric optical zone and the other of said surfaces including a spherical optical zone, the surfaces being shaped to form a ballast oriented about a ballast axis, each lens in the series having a common effective base curve and overall diameter but different cylindrical corrections ranging from at least -0.75 to -2.75,

> wherein each lens in the series has a thickness at any portion of the lens that is not more than 0.2 mm than other lenses in the series.

'236 Patent at col. 6, ln. 66 - col. 7, ln. 91.

A disputed claim term is also found in dependent claims 4, 5, 11, 12, and 22. Each of these claims refers to the "maximum thickness" of the lens at either the "top of the optical zone" or the "top optical zone." The parties agree that the terms "top optical zone" and "top of the optical zone" have the same meaning, but disagree as to what that meaning is.

I discuss the disputed claim terms seriatim.

I. "A Diameter of the Posterior Optical Zone and a Diameter of the Anterior [Optical] Zone"

Claim 1 of the '236 Patent discloses in relevant part that "a diameter of the posterior optical zone and a diameter of the anterior [optical] zone are selected to minimize thickness of the lens based on the cylindrical correction of the lens." Claim 8 of the '236 Patent discloses in relevant part that each lens in a series of lenses "has a posterior optical zone diameter and an anterior optical zone diameter that are selected to optimize thickness of [the] lens based on the cylindrical correction of the lens."

The parties disagree as to what is meant by "a diameter" of the posterior and/or anterior optical zones. Bausch and Lomb

contends that in the case of a circular optical zone, the diameter of the zone is the diameter of the circle. Bausch and Lomb further contends that in the case of a non-circular optical zone, for example, an oval zone, the term diameter means both the major and minor diameter of the non-circular zone, and the diameter that is selected may be either the major or the minor diameter.

Coopervision contends that in the case of a circular optical zone, the diameter of the zone is the maximum diameter of the specified optic zone. Coopervision further argues, however, that because the '236 Patent only specifies a single diameter for any optical zone, the contact lenses disclosed in the '236 Patent may only utilize circular or spherical optical zones. In other words, Coopervision contends that all optical zones contemplated by the '236 Patent are circular, cannot be oval, and can have only one diameter.

For the reasons set forth below, I find that the '236 Patent discloses the use of two optical zones, including one optical zone that is spherical (having only one diameter), and one optical zone that may be circular (having only one diameter) or elliptical (having two different diameters). For optical zones that are spherical or circular, the term "a diameter" means the diameter of the spherical or circular zone, as there is only a single diameter of a circle or sphere). For non-spherical zones, the term "a

diameter" means either the major or minor diameter of the optical zone.

It is well understood in the art of contact lens design that a toric optical zone, that is an optical zone that provides cylindrical correction and corrects for an astigmatism, may be either circular or non-circular (elliptical) in shape. Coopervision, however, seeks to limit the toric zone disclosed in the '236 Patent to only those zones that are circular. In support of this contention, Coopervision contends that "[w]hen the term 'diameter' is used at all in the specification, it is used to refer to a single diameter for the posterior zone and a single diameter for the anterior optical zone." Defendant's Initial Claim Construction Brief at p. 11. Coopervision further cites to a table disclosed in the '236 Patent listing values for only a single anterior optical zone, and a single posterior optical zone. Id. Finally, Coopervision argues that if the court were to construe the term "diameter" as referring to either a major or minor diameter of an elliptical optical zone, such a construction would not only be inconsistent with how the term "diameter" is understood in the art, but would also render independent Claims 1 and 8 of the '236 Patent invalid on grounds that they would be indefinite. I discuss these arguments in order.

A. The use of the term "a diameter" in the '236 Patent does not evince any intent of the inventors to limit the toric optical zone disclosed in the patent to a circle-shaped zone.

As stated above, it is well settled that in the art of contact lens design, a toric optical zone may be elliptical or circular. The '236 Patent discloses the use of a toric optical zone, but does not state whether the zone may be, or must be, a particular shape. Accordingly, based on the ordinary understanding of the term toric optical zone in the art of contact lens design, it is presumed that the term refers to an optical zone that may be either elliptical or circular in shape. Fromson v. Advance Offset Plate, Inc., 720 F.2d 1565, 1571 (Fed. Cir. 1983)(words used in patent generally mean what one skilled in the art would ordinarily expect them to mean.); Vitronics, 90 F.3d at 1582.

Although the '236 Patent does not explicitly define the shape of a toric optical zone, Coopervision suggests that the '236 Patent implicitly limits the shape of the toric optical zone to a circularly-shaped zone because the '236 Patent, when referring to the diameter of the toric zone, only refers to one diameter, thus indicating that the only shape that a toric optical zone may take is a circle.

I find, however, that the term "diameter" as used in the specification of the '236 Patent does not, when referring to the toric optical zone, suggest or require that the zone take only the shape of a circle. There are three references to optical zone

diameters in the Specification of the '236 Patent. Not one of these references, however, makes clear or even suggests that the inventors intended to limit the shape of a toric optical zone to a circle-shaped zone. For example, the first reference to an optical zone diameter is found at Column 3, where the patent states that:

> Applicant found, however, that by adjusting the diameters of the posterior and/or anterior optical zones, based on the cylindrical correction of a toric contact lens, the thickness profile of the lens can be maintained fairly constant over a series of lenses, including lenses having a range of cylindrical corrections. In other words, in a series of contact lenses having different cylindrical corrections, the thickness of lenses in the series, at any nominal section of lenses in the series, can be maintained consistent across the series. The diameters of the optical zones are selected based on the cylindrical correction of the lens.

'236 Patent Col 3, lns. 1-15 (emphasis added). As used in this case, there is no evidence that the term "diameters" refers to only a single diameter of each optical zone, or multiple diameters of either optical zone. Because the inventors did not clearly indicate that a toric optical zone may have only one diameter, one can not infer that the inventors intended to redefine the permissible shape of a toric optical by limiting that shape to a circle.

The second reference in the Specification to optical zone diameters provides that:

> Each lens in the series will preferably have a posterior optical zone diameter of 6.5 to 10 mm, more preferably 7 to 8 mm, and an anterior optical zone diameter of 6.5 to 10 mm, more preferably, 7.8 to 9 mm. Generally, the diameter of the posterior optical zone will be smaller than or equal to a diameter of the anterior optical zone.

'236 Patent at col. 3 lns. 44-49. (Emphasis added). In the first sentence, the inventors refer to "a" posterior optical zone diameter, and "an" anterior optical zone diameter. By using the modifiers "a" or "an", (instead of the modifier "the") the inventors indicate that there may be more than one diameter of either the anterior or posterior optical zones.

In the second sentence, however, by referring to "the" diameter of the posterior optical zone, the inventors suggest that the posterior optical zone being described has only one diameter. Nevertheless, even assuming that the inventors intended to limit the posterior optical zone being described to a circular or shape, this reference does not support a conclusion that the inventors intended to limit a toric optical zone to the shape of a sphere. First, there is no evidence that the posterior zone referred to in this passage is the toric zone.[2] As the inventors stated at column

[2] While the Inventors indicated that the posterior optical zone depicted in Figure 1 of the patent contained the toric optical zone, and that the lens depicted in Figure 1 is a preferred embodiment, there is no indication that the posterior optical zone discussed in the above-cited passage is, by necessity, a toric optical zone. Moreover, even if this passage does reference a toric zone, the discussion is of a preferred embodiment, not all possible embodiments.

1, lines 14-17, the toric optical zone may be located either on the anterior or posterior surfaces of the lens. Accordingly, although the posterior zone referenced here may be limited to a single diameter, there is no evidence that the posterior zone referred to is the toric zone. Therefore, no inference can be made that a toric optical zone is limited to a zone having a single diameter. Moreover, the inventors specify that the diameter of the posterior zone should be smaller than a diameter of the anterior optical zone. Again, by using the modifier "a", the inventors indicate that the anterior optical zone described in the passage may have more than one diameter. As a result, this passage merely reaffirms the unremarkable proposition that one surface of the lens contains a spherical optical zone, while the other surface contains an optical zone that may be elliptical.

The final reference in the specification to the diameters of the optical zones occurs at column 5, where, in discussing data found in Table 2B of the '236 Patent, the inventors state that "[e]ven though the center thickness variations ranged 0.145 mm over the series, a near constant thickness at the at the top optical zone juncture and ballast, consistent with the values shown in FIG. 1, can be maintained through proper selection of the optical zone diameters." '236 Patent at col. 5, lns. 20-25 (emphasis added). Again, the term "diameters" as used in this passage does not

suggest that the toric optical zone disclosed in the '236 Patent be limited to a circular-shaped zone.

That the '236 Patent does not limit toric optical zones exclusively to zones that are circular may be best illustrated by the Claims of the Patent. All but two of the claims that discuss optical zone diameters use the term "a diameter" when discussing at least one of the optical zones.[3] In the remaining two claims, dependant claims 6 and 7, each optical zone is referred to as having only one diameter. For example, Claim 6 of the '236 Patent claims "[t]he contact lens of claim 1, wherein the diameter of the posterior optical zone is 6.5 to 10 mm, and the diameter of the anterior optical zone is 6.5 to 10 mm. (emphasis added) Claim 7 of the '236 Patent Claims "[t]he contact lens of claim 6, wherein the diameter of the posterior optical zone is 7 to 8 mm, and the diameter of the anterior optical zone is 7.8 to 9 mm." '236 Patent at col. 6, lns, 27-32. (emphasis added) These are the only claims of the '236 Patent in which the inventors specified that each optical zone has a single diameter. Accordingly, these claims are limited to optical zones that are circular in shape. Because the '236 Patent has specified the limited instances in which the toric optical zone must be circular, it would be improper to impose that limitation on all of the claims.

[3] The term "a diameter" is found in Claims 1, 2, 8, 9, 13, and 14

B. Limitations present in the preferred embodiment do not limit the Claims of the '236 Patent

Coopervision next argues that because Table 2A of the '236 Patent lists only a single diameter of the posterior optical zone, (which in this case has been identified as being the toric zone) the toric zone described in the '236 Patent must be limited to circle-shaped zones. Table 2A, however, describes a preferred embodiment of the claimed invention, and pursuant to well established rules of claim construction, the limitations found in the preferred embodiment may not be imposed on the claims themselves, absent language found in the claims that would support such limitations. Arlington Industries, Inc. v. Bridgeport Fittings, Inc., 345 F.3d 1318, 1327 (Fed. Cir., 2003); Resonate Inc. v. Alteon Websystems, Inc., 338 F.3d 1360, 1367 (Fed. Cir. 2003)("limitations may not be read into a claim from a preferred embodiment when the claim language is broader than that embodiment"). Because I find, with the exception of Claims 6 and 7 of the '236 Patent, that the '236 Patent does not require a toric optical zone to be circular, I decline to import any such limitation that may be found in a preferred embodiment onto the claims as a whole.

C. Claims 1 and 8 of the '236 Patent are not indefinite

Finally, Coopervision contends that if the court were to construe the term "diameter" as referring to either a major or

minor diameter of an elliptical optical zone, such a construction would not only be inconsistent with how the term "diameter" is understood in the art, but would also render independent Claims 1 and 8 of the '236 Patent invalid on grounds that they would be indefinite. Specifically, Coopervision contends that under international standards developed in the field of contact lens design, the term "diameter" is understood to refer to the major (flat) meridian of an elliptical optical zone. Defendant argues that any interpretation suggesting that the diameter to be selected could be either the major or minor meridian runs afoul of the generally accepted use of that term. Coopervision also contends that "there is nothing in the '236 Patent which describes how a person of ordinary skill in the art should select a diameter in the flat and/or steep meridian of an elliptical optical zone to achieve the 'minimum' or 'optimal' thickness." Defendant's Initial Claim Construction Brief at p. 12.

I find, however, that the claim construction adopted by this court is in accordance with the international standards used in the field of contact lenses at the time the '236 Patent was granted, and does not render Claims 1 or 8 indefinite. The international standard cited by defendant, suggesting that an elliptical optical zone is defined by its major meridian, was adopted in 2003, three years after the '236 Patent was granted, and 5 years after the inventors applied for their patent. As such, that standard is not

applicable to the terms used in the Patent. Rather, during the time that the '236 Patent was applied for and granted, the international standard governing the definition of optical zone diameters provided that in cases where the optical zone is not circular, "the major and minor diameters define the size." Defendant's Initial Claim Construction Brief at p. 13. Accordingly, a construction of the term diameter that allows a user to select either the major or minor diameter when adjusting the diameter to minimize thickness does not run afoul of the international standards in place at the time the '236 Patent was granted.

Nor are Claims 1 or 8 of the '236 Patent as construed here indefinite. The '236 Patent clearly teaches that optical zone diameters are chosen given a specific cylindrical correction for the purpose of minimizing or optimizing lens thickness. Accordingly, one skilled in the art would understand that the diameters of any optical zone could be adjusted only insofar as the adjustments provide the required cylindrical correction, the desired optical correction, and either minimize or optimize the thickness of the lens. The '236 Patent's teaching of this process is clear, and would enable a person skilled in the art to practice the invention.

II. "Minimize" and "Optimize" the Thickness of the Lens

Claim 1 of the '236 Patent discloses in relevant part that the posterior and anterior optical zones of the contact lens are selected "to minimize thickness of the lens . . . ." '236 Patent at col. 6, lns. 14-16. Claim 8 of the '236 Patent provides in relevant part that the optical zone diameters are chosen to "optimize" the thickness of each contact lens in a series of lenses. '236 Patent at col. 6, lns. 41-43.

Bausch and Lomb contends that the term "minimize" means "to reduce [the lens] to the smallest desired value." Plaintiff's Opening Brief on Claim Construction at p. 18. Coopervision objects to Bausch and Lomb's proposed construction on grounds that the term "minimize" means to reduce something "to a value as small as possible, not to some arbitrary "desired" value." Defendant's Rebuttal Claim Construction Brief at p. 4-5.

I find that the term "minimize" means "to reduce to the smallest possible number, degree, or extent." Webster's Third New International Dictionary 1438 (2002). In the context of Claim 1 of the '236 Patent, the term minimize means to reduce the thickness of the lens to the smallest possible size, and not to the smallest *desired* size.

By holding that the term "minimize" means to reduce to the smallest possible size, the term is differentiated from the term "optimize" as used in Claim 8 of the 236 Patent. "Optimize" means to make something "as perfect, effective or functional as

possible." Webster's Third New International Dictionary 1585 (2002). Accordingly, the term "optimize," unlike the term "minimize," incorporates subjective considerations. If the court were to interject a subjective component to the term "minimize" (such as "desired thickness"), it would render the terms "minimize" and "optimize" identical, in that minimization would not require making the lens as thin as possible, but instead would require that the lens be made as thin as desired. Such an interpretation would violate the claim interpretation rule of claim differentiation, which provides that:

> [t]here is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant.

Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023, (Fed. Cir. 1987). Because the inventors chose to use the term "minimize" in Claim 1 of the '236 Patent and "optimize" in Claim 8, there is a presumption that the words have different meanings. I therefore distinguish those terms as set forth above.

The parties further disagree as to where on the disclosed contact lens the thickness must be "minimized" or "optimized." Bausch and Lomb contends that the thickness may be minimized or optimized at any location on the lens, while Coopervision contends

that the minimization or optimization of the lens occurs only in the optical zone of the lens.

I find that the minimization or optimization of the lens may occur at any location on the lens, and is not restricted to the optical zones of the lens. The parties agree that the '236 Patent teaches optimization or minimization at any location on the lens. Defendant's Initial Claim Construction Brief at p. 14 ("The parties agree that the plain language of the claims appears to contemplate minimizing/optimizing thickness at all points on the lens, not simply the optical zone.") Coopervision argues, however, that the plaintiff disavowed such a broad scope of this term during the prosecution of the '236 Patent, when the inventors, in an effort to distinguish their invention from a prior art patent (the "Sitterle" patent) allegedly conceded that optimization or minimization of lens thickness occurred only in the area of the optical zones of the lenses. Specifically, Coopervision relies on a statement made by the applicants to the patent examiner in which the applicants stated:

> [W]hereas Sitterle is concerned with reducing thickness of the ballast . . . the present invention is concerned with minimizing thickness at the optical zone region based on cylindrical correction. Stated differently, providing uniform thickness in the prism ballast region (as in Sitterle) would not affect thickness at the optical zone (as in the present invention), and vice versa.

'236 Prosecution History at CVI 000062, attached as Exhibit 2 to Defendant's Initial Claim Construction Brief. According to the defendants, this statement limits the area to be minimized to only the optical zone region, and constitutes a disavowal of any broader construction of the terms "minimize" or "optimize."

I find however, that the above statement does not constitute a clear and unambiguous surrender of the patent's teaching that thickness of the lens may be optimized or minimized at "any nominal section" of the lens. 236 Patent at col. 3, lns. 3-6 ("the thickness of lenses in the series, at any nominal section of lenses in the series, can be maintained consistent across the series)(emphasis added). While it is true that under well established rules of claim construction, the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution (Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995)) any purported disavowal of a permissible interpretation must be "clear and unambiguous." Computer Docking Station Corp., v. Dell, Inc., 519 F.3d 1366, 1375 (Fed. Cir., 2008)(citations omitted). In the instant case, the statement relied on by Coopervision is ambiguous at best. The inventors distinguished their art by noting that the thickness of the lens pursuant to their claims could be optimized or minimized "at the optical zone region", unlike the prior art Sitterle patent, which only taught

optimization of thickness in the ballast region. Such a distinction does not limit optimization to only the optical zone region, but merely establishes that unlike Sitterle, optimization could take place "at the optical zone region." Accordingly, the applicant's statement made during prosecution does not constitute a clear and unambiguous disavowal of the '236 Patent's disclosure in the specification that lens thickness may be measured at any point on the lens.

III. "Based on the Cylindrical Correction of the Lens"

Claims 1 and 8 of the '236 Patent provide that diameters of the posterior and anterior optical zones are selected to either minimize or optimize the thickness of the lens "based on the cylindrical correction of the lens."

Bausch & Lomb contends that the term "based on the cylindrical correction of the lens" means that "for any particular cylindrical correction, the specified optical zone diameters are chosen so as to reduce lens thickness to the smallest desired value . . . or to minimize variations in lens thickness at the same point on all lenses in a series." Plaintiff's Opening Brief on Claim Construction at p. 21. Coopervision contends that the term "based on the cylindrical correction of the lens" means that "the basis for choosing both the back and front optical zone diameters is the

cylindrical (astigmatic) correction of the lens." Defendant's Initial Claim Construction Brief at p. 15.

Interestingly, Bausch & Lomb characterizes the discrepancy between the two constructions as insignificant, and states that "[t]here appears to be no dispute about the construction of what the claims mean when they state selecting optical zone diameters (front and back) 'based on cylindrical correction.'" Plaintiff's Answering Brief on Claim Construction at p. 13. Coopervision, however, argues that plaintiff's proposed construction of the phrase "based on the cylindrical correction" differs greatly from its proposed construction, and suggests that adoption of plaintiff's proposed construction would render the phrase "based on the cylindrical correction" "meaningless." Defendant's Rebuttal Claim Construction Brief at p. 8. Such is the nature of claim construction that in some cases, the parties can not even agree as to whether or not they are in agreement.

I find that the term "based on the cylindrical correction" as used in Claims 1 and 8 of the '236 Patent means that the optical zone diameters of a given lens will be selected based on the cylindrical correction of the lens, and will be selected for the purpose of minimizing or optimizing the thickness of the lens. In other words, the cylindrical correction of the lens dictates what size the optical zone diameters may be. From the total combination of anterior and posterior optical zone diameters that provide the required cylindrical correction, the person practicing the art of

the '236 Patent would then choose the one combination of an anterior and posterior optical zone diameter that minimizes or optimizes the thickness of the lens.

Because I find that the diameters of the optical zones are chosen based on the desired cylindrical correction, I reject plaintiff's characterization that the optical zone diameters may be selected for any reason, provided that the goal of minimizing or optimizing lens thickness is achieved. That position is contradicted by the plain language of the patent, which states that cylindrical correction is the basis for selecting optical zone diameters. Once the diameters that provide the desired cylindrical correction are identified, the practitioner may then further refine the selection of the optical zone diameters for the purpose of minimizing or optimizing lens thickness.

IV. "Top of the Optical Zone" and "Top Optical Zone"

Dependent claims 4, 5, 11, 12 and 20 of the '236 Patent each disclose the maximum thickness (in millimeters) that the disclosed contact lens may have at a location on the lens identified as the "top of the optical zone" or the "top optical zone". The parties agree that these two terms have the same meaning, but disagree over what that meaning is. Bausch & Lomb contends that the "top of the optical zone" refers to "the highest juncture point between an optical zone and a surrounding zone located along a vertical line (joining 12 o'clock and 6 o'clock) on a properly-oriented finished

lens." Plaintiff's Opening Brief on Claim Construction at p. 22. In support of this construction, Bausch & Lomb argues that a person of ordinary skill in the art of contact lens manufacture would understand that the top of an optical zone would be the highest juncture of the optical zone and a peripheral zone along a vertical axis of a properly oriented contact lens.

Coopervision disagrees with plaintiff's construction, and argues that the top of the optical zone is located at the highest juncture between the optical zone and a peripheral zone, regardless of whether that point falls along the 12 o'clock - 6 o'clock vertical axis of the contact lens. In support of this construction, defendant cites the '236 Patent itself, which states that "[t]he thickness at the "top" of the optical zone is the thickness at the highest optical zone juncture when the lens assumes its intended position on the eye."

'236 Patent at col. 3, lns. 32-35.

In general, the words used in a patent claim mean what one skilled in the art would ordinarily expect them to mean. Fromson, 720 F.2d at 1571; Vitronics, 90 F.3d at 1582. However, because an inventor may choose to be his or her own lexicographer, the meaning of a word or term used in a claim may be specifically defined by the inventor, and used in a manner different than the ordinary meaning. Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387-88 (Fed. Cir. 1992); Vitronics, 90 F.3d at 1582.

In the instant case, I find that inventors chose to define the term "top of the optical zone", and therefore, the definition they chose delimits the construction that this court may adopt. Had the inventors chosen not to define the term "top of the optical zone," extrinsic evidence of how that term is understood in the art might be relevant. But in this case, the inventors chose to define the term. Accordingly, it is the inventor's definition, as disclosed in the specification, that controls the construction of the term.

Therefore, in conformance with the express language of the '236 Patent which states that "[t]he thickness at the "top" of the optical zone is the thickness at the highest optical zone juncture when the lens assumes its intended position on the eye" ('236 Patent at col. 3, lns. 32-35), I find that the terms "top of the optical zone" and "top optical zone" refer to the highest optical zone juncture when the lens assumes its intended position on the eye, regardless of whether that location falls along the 12 o'clock - 6 o'clock vertical axis of the lens. There is simply no language in the '236 Patent to suggest that the location of the top of the optical zone should be limited to a point affixed along a vertical axis bisecting the lens when the lens assumes its intended position on the eye. Because there is no basis for adding this additional, limiting language, I decline to limit the location of the top of the optical zone to the highest optical zone juncture along such an axis.

V. "Each Lens in the Series Having a Common Effective Base Curve and Overall Diameter but Different Cylindrical Corrections"

Claim 8 of the '236 Patent provides in relevant part that each lens in a contemplated series of lenses shall have "a common effective base curve and overall diameter", but that the lenses will have "different cylindrical corrections." '236 Patent at col. 6, lns. 38-40. The parties agree as to the meaning of these claim terms, but Coopervision proposes adding "clarifying language" specifying that "each lens in the series may have the same or different spherical correction or axis". Defendant's Initial Claim Construction Brief at p. 16. In support of this construction, defendant argues that because the claim is silent with respect to spherical correction and axis orientation, the claim is vague unless clarifying language is adopted. Coopervision further argues that because the claim term itself places no limitations on the spherical correction or axis orientation of lenses in the disclosed series, the clarifying language proposed by Coopervision does not impose any limitation, but merely affirmatively states what is implied by the claim language.

I find that the term "each lens in the series having a common effective base curve and overall diameter but different cylindrical corrections" is clear and comprehensive, and does not require the addition of language regarding spherical correction or orientation axis. The claim clearly specifies that each lens in the

contemplated series of lenses will have a common effective base curve, and a common overall diameter, but that the cylindrical correction of each lens will be different. On this point the parties have no disagreement. Additionally, the claim is silent as to the axis of the lenses, as well as the spherical correction of the lenses in the series. As a result, those factors are irrelevant to the series of lenses disclosed in Claim 8 of the '236 Patent. Accordingly, there is no need to include additional language regarding the spherical correction or axial orientation to the construction of this claim term.

VI. Ranging from at Least -0.75 to -2.75 diopters

As stated above, Claim 17 of the '236 Patent discloses "[a] series of toric contact lenses, [with] . . . each lens in the series having a common effective base curve and overall diameter but different cylindrical corrections ranging from at least -0.75 to -2.75 [diopters]. . . ."

Bausch & Lomb contends that the limitation "at least -0.75 to -2.75" diopters means that the series of lenses must include a lens with a cylindrical correction of at least -0.75 diopters, and may include any lenses with cylindrical corrections up to -2.75 diopters. Under this proposed construction, the series need not include all cylindrical corrections above -0.75 diopters, and the maximum cylindrical correction that a lens in any series may have

is -2.75 diopters. See Plaintiff's Answering Brief on Claim Construction at p. 14 ("The upper limit of the range is '-2.75'")

Coopervision argues that the term "at least -0.75 to -2.75" discloses a series of lenses that must include lenses ranging from -0.75 diopters to -2.75 diopters, and that the series of lenses may include lenses with cylindrical corrections that extend beyond -2.75. Under Coopervision's proposed construction, any series of lenses must include lenses with cylindrical corrections of -0.75 and -2.75, and may include lenses with cylindrical corrections beyond -2.75.

At the heart of the parties disagreement is whether or not the term "at least" which precedes the numerical range "-0.75 to -2.75" modifies both numbers in that range, or modifies only the first number. Coopervision contends that the term "at least" applies to both numbers, and that the claim describes a series of lenses that ranges from at least -0.75 to at least -2.75, and may (if desired) extend beyond -2.75. Bausch & Lomb, however, contends that the term "at least" modifies only the number -0.75, and that the claim describes a series of lenses that ranges from at least -0.75 to, at most, -2.75. Under Bausch and Lomb's proposed construction, the maximum value for the cylindrical correction of a lens in a series of lenses is -2.75.

I find, however, that the term "at least -0.75 to -2.75" as used in Claim 17 of the '236 Patent describes a series of lenses that must include lenses with cylindrical corrections of -0.75 and

-2.75 diopters, and may include lenses with cylindrical corrections above -2.75 diopters. Support for this position is found in the '236 Patent itself. The specification of the '236 Patent clearly an unequivocally states that "[t]he invention is applicable for toric contact lenses having cylindrical corrections ranging from at least -0.75 diopter to -2.75, and even up to -3.75 diopter, -4.25 diopter and greater." '236 Patent at col. 3, lns. 22-25 (emphasis added). Because the '236 Patent contemplates lenses incorporating cylindrical corrections that are greater than -2.75, it is clear that the modifier "at least" preceding the given range of -.75 to -2.75 must modify both numbers in that range, and describes a series of lenses that ranges from at least -0.75 to at least -2.75. If the term "at least" did not modify both numbers, it would indicate that the maximum value for the cylindrical correction of a lens in a series would be -2.75. As discussed above, however, the '236 Patent clearly states that the invention is applicable to lenses with cylindrical corrections above -2.75. '236 Patent at col. 3, lns. 22-25. Accordingly, I reject plaintiff's proposed construction as inconsistent with the patent language itself.

CONCLUSION

For the reasons stated herein, I construe the disputed claim terms of the '236 Patent as set forth above.

ALL OF THE ABOVE IS SO ORDERED.

S/ Michael A. Telesca

MICHAEL A. TELESCA
United States District Judge

Dated: Rochester, New York
November 12, 2008